AP ENVIRONMENTAL SCIENCE • EXERCISE SHEET

8.10 Waste Reduction Methods

Name: _____ Class: _____ Date: _____ **Total: 10 marks**

KEY WORDS composting 堆肥 • reduce, reuse, recycle 减量、再利用、回收

Objective

Build the skills to answer exam questions on **waste reduction methods**.

You must be able to:

- apply the **three Rs** (reduce, reuse, recycle) and **composting** 堆肥
- explain the **waste hierarchy** (reduce is best)
- describe benefits of each method

1 Worked examples

Study these first. Each one shows the method for a question type used later — follow the steps and you can do the Practice and Exam-style questions yourself.

The waste hierarchy

Best to worst: **Reduce → Reuse → Recycle → (Recover energy) → Dispose**. Preventing waste in the first place (**reduce**) is best.

The three Rs

- **Reduce** — use less / buy less packaging.
- **Reuse** — use items again (refillable bottles).
- **Recycle** — process materials into new products (paper, glass, metal, plastic).

Composting

Composting turns food and yard waste into fertilizer, keeping organic matter out of landfills (where it would make methane) and enriching soil.

Benefits

Waste reduction saves **landfill space**, **energy**, and **raw materials**, and cuts pollution and greenhouse gases.

2 Practice

Now apply the methods above.

2.1 State the three Rs in order (best first). [1]

2.2 What does composting turn waste into? [1]

2.3 Which R is the most effective? [1]

3 Exam-style questions

3.1 In the waste hierarchy, the best option is to [1]

- **A** dispose
- **B** recycle
- **C** reduce
- **D** incinerate

3.2 A household wants to cut its waste.

(a) Give one example each of reducing, reusing, and recycling. [3]

(b) Explain one environmental benefit of composting food scraps. [1]

3.3 Explain why “reduce” is more effective than “recycle”. [2]

Solutions

2.1 Reduce, reuse, recycle.

2.2 Compost (fertilizer / soil enrichment).

2.3 Reduce.

3.1 C — reduce.

3.2 (a) Reduce: buy less/less packaging; reuse: refillable bottle; recycle: paper/glass/metal. (b) It keeps organics out of landfills (avoiding methane) and enriches soil.

3.3 Reducing prevents the waste (and the energy/materials to make and process it) entirely, while recycling still uses energy to collect and reprocess the material.